

## ABSTRACT

This invention relates to polypeptide antibiotics, including materials and methods related thereto, based upon the observation that bacteriophage elaborate proteins that cause host cell lysis by interfering with specific steps in cell wall biosynthesis. Examples of antibiotics based upon this invention include the bacteriophage  $\phi$ X174 gene E product and structurally and/or functionally related polypeptide and small protein antibiotics that interact with MraY, and the bacteriophage Q $\beta$  gene A<sub>2</sub> product and structurally and/or functionally related polypeptide and small protein antibiotics that interact with MurA. This leads to the general model for obtaining new polypeptide antibiotics by using genetic approaches based on these findings to find polypeptide sequences which cause bacterial cell lysis.